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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,134	01/11/2002	Hyun Jeong Park	Q67500	5826

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EXAMINER	
ORTIZ CRIADO, JORGE L	
ART UNIT	**PAPER NUMBER**
2655	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/042,134	PARK, HYUN JEONG	
	Examiner	Art Unit	
	Jorge L. Ortiz-Criado	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-5,9-11 and 15-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-5,9-11 and 15-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The amendment filed 12/07/2004 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: All occurrences of "EFM (Eight to Fifteen Modulation)" throughout the specification and claims are changed to "EFM (Eight to Fourteen Modulation)", specifically for the purpose of changing the specification of the invention claimed and claims to be drawn to an industry standard eight to fourteen modulation. These amendments changes and alters the scope of the invention as originally filed and claimed, since the "eight to fifteen modulation" is also an industry standard readily used by one of ordinary skill in the art. It raises a doubt as to the possession of the claimed invention at the time of filing.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 3-5, 9-11 and 15-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 3,5, 9, 11, 15, and17 recites the limitation "EFM (Eight to Fourteen Modulation)", the examiner cannot readily ascertain/map with the above claim language where in the specification as originally filed such a disclosure/support is found in the descriptive portion of the specification by reference to the drawings, designating the part or parts therein to which the term "EFM (Eight to Fourteen Modulation)" applies.

Claims 5, 11 and 17 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 5, 11 and 17 recites the limitation "the motor control signal generating means adds **- α or + α** to the first error value". And the written description do not adequate identify how the "**α** value" is being added or what specifically is the "**α** value", the disclosure does not enable one skilled in the art to make and use the invention as claimed without undue experimentation on how this values are actually being obtained or added. The only relationship with these **- α or + α** is that the spindle motor decelerates or accelerates the speed in response

to these "values added" to an error value. Applicant's cooperation in regard with this matter is respectfully requested, as to explain how these values correlates with the error value, and as originally filed, where the support being found.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 3-5, 9-11 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over "the admitted prior art" in view of Koudo et al. U.S. Patent No. 5,956,307.

Regarding claims 3 and 9, the admitted prior art discloses a means for controlling spindle motor speed of an optical disc reproducing device having a buffer that buffers data reproduced from a disc and reproduces an audio signal (See page 3, line 21 to page 4, line 4; Fig. 1), comprising:

an EFM demodulation means for EFM (Eight to Fourteen Modulation)demodulating the data read by the disc and outputting EFM data and a WFCK (Write Frame Sync Clock)(See page 2, lines 10-14; Fig. 1, ref# 104);

a frequency error measurement means for comparing a frequency of the WFCK extracted by the EFM demodulation means with a frequency of a theoretical WFCK and outputting the difference between the extracted WFCK and the theoretical WFCK as an error value (See page 2, lines 10-17; Fig. 1, ref# 106);

a buffering means for storing the EFM data, performing ECC (Error Code Correction) of the stored EFM data and storing transfer data to be transmitted to an external system for reproduction of an audio signal after the ECC (See page 3, lines 10-16);

a motor control signal generating means for controlling the rotation speed of the spindle motor that rotates the disc, based on the error value provided by the frequency error measurement means, to reproduce an audio signal (See page 2, lines 17-19; Fig. 1, ref# 108)

The prior art fails does not discloses a lead/lag detection means for comparing points in the buffering means where the EFM data is recorded and the transfer data is read, and identifying transfer pointer leads or lags behind an EFM pointer; and controlling the rotation speed of the spindle motor based on the lead/lag information detected by the lead/lag detection means.

However, this feature is well known in the art as evidenced by Koudo et al., which discloses a means for controlling spindle motor speed of an optical disc reproducing device having a buffer that buffers data reproduced from a disc and reproduces an audio signal, comprising a demodulation means for demodulating the data read by the disc and outputting the data and a Write Frame Sync Clock (WFCK); a frequency error measurement means for comparing a frequency of the WFCK extracted by the demodulation means with a frequency of a theoretical WFCK and outputting the difference between the extracted WFCK and the theoretical WFCK as an error value; a buffering means for storing the data, performing ECC (Error Code

Correction) of the stored data and storing transfer data to be transmitted to an external system for reproduction of an audio signal after the ECC (See Fig. 3, col. 22, line 1 to col. 23, line 57);

a lead/lag(**"phase difference"**) detection means for comparing points (**"address locations"**) in the buffering means where the data is recorded and the transfer data is read, and identifying transfer pointer leads or lags ("**the phase difference result**") behind a pointer (See Fig. 3, ref# 39,34,35; col. 22, lines 11-31); and

wherein the lead/lag ("**phase difference**") detection means compares the points in the buffering means where the EFM data is recorded and the transfer data is read (See Fig. 3, ref# 39,34,35; col. 22, lines 11-31), and generates the lead signal indicating the transfer pointer is located before the EFM pointer and the lag signal indicating the transfer pointer is located after the EFM pointer (generated result **phase difference** leads or lags")

wherein the lead/lag ("**phase difference**") detection means generates the lead signal and the lag signal only when a gap between the transfer pointer and the EFM pointer exceeds a prescribed range (See col. 22, line 7 to col. 23, line 10)

a motor control signal generating means for controlling the rotation speed of the spindle motor that rotates the disc, based on the error value provided by the frequency error measurement means and lead/lag ("**phase difference**") information detected by the lead/lag("**phase difference**") detection means (See Fig. 3, ref# 3; col.. 22 lines 34-64)

Therefore, it would have been obvious to one with an ordinary skill in the art at the time of the invention to include a lead/lag ("**phase difference**") detection means for comparing points in the buffering means where the data is recorded and the transfer data is read, and identifying transfer pointer leads or lags ("**the phase difference result**") behind a pointer; and controlling

the rotation speed of the spindle motor based on the based on the error value provided by the frequency error measurement means and lead/lag ("**phase difference**") information detected by the lead/lag ("**phase difference**") detection means, in order to avoid cumulative clock errors between the read (read out data from the buffer) and write (data recorded to the buffer) clock avoiding reproduction errors of the audio data to be reproduced, as suggested by Koudo et al

Regarding claims 5 and 11, the admitted prior art discloses a means for controlling spindle motor speed of an optical disc reproducing device having a buffer that buffers data reproduced from a disc and reproduces an audio signal (See page 3, line 21 to page 4, line 4; Fig. 1), comprising:

an EFM demodulation means for EFM (Eight to Fourteen Modulation)demodulating the data read by the disc and outputting EFM data and a WFCK (Write Frame Sync Clock)(See page 2, lines 10-14; Fig. 1, ref# 104);

a frequency error measurement means for comparing a frequency of the WFCK extracted by the EFM demodulation means with a frequency of a theoretical WFCK and outputting the difference between the extracted WFCK and the theoretical WFCK as an error value (See page 2, lines 10-17; Fig. 1, ref# 106);

a buffering means for storing the EFM data, performing ECC (Error Code Correction) of the stored EFM data and storing transfer data to be transmitted to an external system for reproduction of an audio signal after the ECC (See page 3, lines 10-16);

a motor control signal generating means for controlling the rotation speed of the spindle motor that rotates the disc, based on the error value provided by the frequency error measurement means, to reproduce an audio signal (See page 2, lines 17-19; Fig. 1, ref# 108)

The prior art fails does not discloses a lead/lag detection means for comparing points in the buffering means where the EFM data is recorded and the transfer data is read, and identifying transfer pointer leads or lags behind an EFM pointer; and controlling the rotation speed of the spindle motor based on the lead/lag information detected by the lead/lag detection means.

However, this feature is well known in the art as evidenced by Koudo et al., which discloses a means for controlling spindle motor speed of an optical disc reproducing device having a buffer that buffers data reproduced from a disc and reproduces an audio signal, comprising a demodulation means for demodulating the data read by the disc and outputting the data and a Write Frame Sync Clock (WFCK); a frequency error measurement means for comparing a frequency of the WFCK extracted by the demodulation means with a frequency of a theoretical WFCK and outputting the difference between the extracted WFCK and the theoretical WFCK as an error value; a buffering means for storing the data, performing ECC (Error Code Correction) of the stored data and storing transfer data to be transmitted to an external system for reproduction of an audio signal after the ECC (See Fig. 3, col. 22, line 1 to col. 23, line 57);

a lead/lag(**"phase difference"**) detection means for comparing points (**"address locations"**) in the buffering means where the data is recorded and the transfer data is read, and identifying transfer pointer leads or lags ("**the phase difference result**") behind a pointer (See Fig. 3, ref# 39,34,35; col. 22, lines 11-31); and

a motor control signal generating means for controlling the rotation speed of the spindle motor that rotates the disc, based on the error value provided by the frequency error measurement means and lead/lag ("**phase difference**") information detected by the lead/lag("**phase difference**") detection means (See Fig. 3, ref# 3; col.. 22 lines 34-64)

wherein the motor control signal generating means adds "**- α or + α**" to the first error value generated by the frequency error measurement means depending on the comparison by the lead/lag ("**phase difference**") detection means (See Koudo et al.; Fig. 3, ref# 3, col. 22, lines 55-56)

Therefore, it would have been obvious to one with an ordinary skill in the art at the time of the invention to include a lead/lag ("**phase difference**") detection means for comparing points in the buffering means where the data is recorded and the transfer data is read, and identifying transfer pointer leads or lags ("**the phase difference result**") behind a pointer; and controlling the rotation speed of the spindle motor based on the based on the error value provided by the frequency error measurement means and lead/lag ("**phase difference**") information detected by the lead/lag ("**phase difference**") detection means, in order to avoid cumulative clock errors between the read (read out data from the buffer) and write (data recorded to the buffer) clock avoiding reproduction errors of the audio data to be reproduced, as suggested by Koudo et al

Regarding claims 4 and 10, the combination of the admitted prior art and Koudo et al shows wherein the lead/lag ("**phase difference**") detection means "**is configured to**" permit varying of the prescribed range (See Koudo et al; col. 22, lines 44 to col. 23, line 10)

Regarding claims 15-16 and 17, Method claims 15-16 and 17 are drawn to the method of using the corresponding apparatus claimed in claims 9-10 and 11. Therefore method claims 15-16 and 17 correspond to the apparatus claims 9-10 and 11 and are rejected for the same reasons of obviousness as used above.

Response to Arguments

4. Applicant's arguments filed 12/07/2004 have been fully considered but they are not persuasive.

In regard to claims 3, 9 and 15 Applicants argues that Koudo et al. does not teach or suggest a control signal generation based on a prescribed range corresponding to "a gap" between EFM and transfer pointer.

The Examiner cannot concur because Koudo et al. discloses a **phase difference** detection means for comparing points (**"address locations"**) in the buffering means where the data is recorded and the transfer data is read, and identifying transfer pointer **leads or lags** behind a pointer, which is **the phase difference results** which a prescribed gap range between EFM and transfer pointer within a cumulative error region that causes a phase difference (leads/lags). The phase between the address locations in the buffering means is obtained as a phase error. Furthermore, Koudo et al. discloses that the phase (lead/lag result) is fed back to the spindle motor to compensate the phase difference accelerating or decelerating the spindle motor.

In regard to claims 4,10 and 16 Applicants argues that Koudo et al. does not teach or suggest "varying the p[prescribed range".

The Examiner cannot concur because as claimed Koudo et al. discloses a phase difference/lead-lag detection means **is configurable t**o permit varying the prescribed range. Koudo et al. discloses a prescribed cumulative error region, and where the region **is configurable** to varying within a prescribed range that causes such cumulative errors.

In regard to claims 5,11 and 17 Applicants argues that Koudo et al. does not teach or suggest adding **- α or + α** to a frequency error value.

The Examiner cannot concur because Koudo et al. discloses wherein the spindle motor controls the rotation of the disk with reference to the output of the frequency comparison and the output of the phase comparison, the output of the phase difference means #39 and the frequency comparison circuit #38 are added into the spindle motor control circuit # 3, and accelerates or decelerates the spindle motor due the to values outputted. The phase result either if is (+) or (-) is utilized by the spindle control circuit together with the error value outputted from the frequency comparison circuit.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jorge L. Ortiz-Criado whose telephone number is (571) 272-7624. The examiner can normally be reached on Mon.-Thu.(8:30 am - 6:00 pm),Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne R. Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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DAVID L. OMETZ
PRIMARY EXAMINER